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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DOUGLAS DEEDS and ANDREW S. WILKEN

Appeal 2009-003619[1]
Application 10/715,790
Technology Center 2600

Decided: September 28, 2009

Before JOHN C. MARTIN, THOMAS S. HAHN,
and ELENI MANTIS MERCADER, *Administrative Patent Judges*.

MARTIN, *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] The real party in interest is Nokia Corporation. Br. 1.

STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1, 3, 5-12, 17-21, 23, 25-32, 37-41, 43, and 45-52, which are all of the pending claims.[2]

We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

A. Appellants' invention

Appellants' invention is directed to detecting and displaying an indication of the bandwidth *available* via a communications system and, in some embodiments, for also detecting and displaying an indication of the bandwidth *required* by the mobile terminal to transmit and receive communications signals. Specification 1:6-12. The claims employ the terms "available bandwidth" and "required bandwidth."

The principal issue in this appeal is how to interpret the claim term "required bandwidth." The Examiner appears to interpret that term as referring to requested *additional* bandwidth, as explained below in the discussion of the rejections. However, for the following reasons, we find that the Specification uses the term "required bandwidth" to refer to the communications system bandwidth that is *currently* being used by the mobile terminal.

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[2] The "Office Action Summary" in the Final Action fails to include claim 52. Also, the Brief (at 6) incorrectly identifies claims 15, 16, 35, 36, 55, and 56 as pending claims.

Appellants' "Background of the Invention" explains that "the bandwidth required by mobile terminals is constantly changing depending on the type and format of the data that the mobile terminal user is sending and receiving at a given time" (*id.* at 1:25-28) and that "there exists a need to communicate to the mobile terminal user, an indication of both available network bandwidth, and the *current bandwidth required* by the terminal to transmit and receive information at a given time." *Id.* at 2:7-10 (emphasis added).

Appellants' Figure 2 is reproduced below.

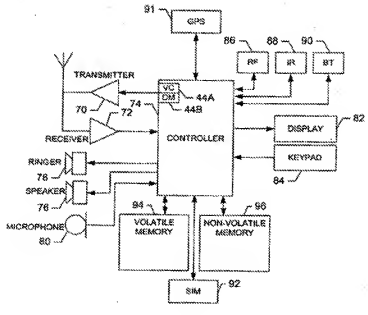

FIG. 2.

Figure 2 is a schematic block diagram of a mobile station that may operate as a terminal. *Id.* at 5:15-16. The mobile station includes a transmitter 70, a receiver 72, a controller 74, and a display 82. *Id.* at 10:3-4, 11:1-2. In a first embodiment, controller 74 monitors the receiver 72 and/or transceivers 86, 88, 90 to determine the available bandwidth of the currently selected communication system(s) based upon information provided by the communications system(s). *Id.* at 13:25-27. Controller 74 then drives or activates the display 82 to visually represent the available bandwidth, using, for instance, a first icon 210, and/or a first color. *Id.* at 13:27-29.

In a second embodiment, controller 74 additionally determines and displays the "required bandwidth" (i.e., the bandwidth currently being used by the mobile terminal):

> Bock 130 [Fig. 4] illustrates the additional step of determining the *bandwidth required from each of the communications system(s) currently being utilized* to support the communications currently being conducted by the mobile terminal 10, and block 140 further illustrates the step of controlling the visual display 82 to also depict the *bandwidth required from each of the communications system(s) currently being utilized.* The controller 74 typically determines the *bandwidth required from each of the communications system(s) that are currently being utilized* by monitoring the transmitter 70, the receiver 72, and transceivers 86, 88, 90 of the illustrated embodiment. The controller 74 then directs or activates the display 82 to visually represent the *bandwidth required from each of the communications system(s) currently being utilized,* using, for instance, a second icon 220, and/or a second color.

Id. at 14:18-29 (bolding omitted; emphasis added).

Figures 9-11 are reproduced below.

Fig. 9

Fig. 10

Fig. 11

Figures 9-10 depict views of exemplary first (210) and second (220) icons for depicting the required and the available bandwidth simultaneously on a display 82. *Id.* at 18:11-12.[3]

The examples depicted in these figures may be analogized to a "stream" or "river" wherein a first icon (210) corresponding to the available bandwidth, is depicted as two parallel horizontal lines representing the "banks" of a "river," while a second icon (220), corresponding to the required bandwidth, is depicted as a band within the parallel "banks" of the first icon to represent a flow of "water" or communications signals, through the "banks" of the available bandwidth. *Id.* at 18:12-18. Thus, Figure 11 shows an example wherein the required bandwidth is equal to the available bandwidth.

The bandwidth information need not be displayed on the mobile terminal to which it pertains. That is, the representation of the available bandwidth and any related information may be displayed upon the display of another terminal. *Id.* at 20:26-31.

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[3] Reference numerals 210 and 220 do not appear in these or any other
(Continued on next page.)

Thus, the Specification clearly uses the term "required bandwidth " to refer to the amount of bandwidth that is currently being used by the mobile terminal. Furthermore, the "required bandwidth" is clearly part of the "available bandwidth."

B. The claims

The independent claims before us are claims 1, 17, 21, 37, and 41. Claims 1, 21, and 41 call for detecting and displaying representations of "available bandwidth" and "required bandwidth," whereas claims 17 and 37 recite detecting available bandwidth for a first terminal and displaying the result on a second terminal.

Claims 1 and 17 read as follows:

> 1. A terminal adapted to communicate via at least one communications system, wherein the terminal comprises:
>
> a transmitter and a receiver for transmitting and receiving signals, respectively, via the at least one communications system;
>
> a display capable of visually representing an available bandwidth of a current communications system and a required bandwidth for transmitting and receiving signals on the current communications system; and
>
> a controller capable of determining the available bandwidth of the current communications system, determining the required bandwidth for transmitting and receiving signals on the current communications system prior to modifying communications therewith, and altering the appearance of the

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figures.

display based on a determination of the available bandwidth and the required bandwidth.

17. A system comprising:

a first terminal comprising a transmitter and a receiver for transmitting and receiving signals, respectively, via the at least one communications system;

a controller capable of determining the available bandwidth of the communications system utilized by said first terminal; and

a second terminal, responsive to said controller, comprising a display capable of visually representing an available bandwidth of the communications system utilized by said first terminal.

C. The references and rejections

The Examiner relies on the following references:

Zancho	US 5,630,159	May 13, 1997
Watanabe	US 6,233,469 B1	May 15, 2001
Arsenault et al. (Arsenault)	US 6,501,770 B2	Dec. 31, 2002
Liao et al. (Liao)	US 2003/0169460 A1	Sep. 11, 2003
Ko et al. (Ko)	US 2004/0048624 A1	Mar. 11, 2004
Rosenfled	US 2004/0071081	Apr. 15, 2004

The claims stand rejected under U.S.C. § 103(a) for obviousness over the prior art as follows:

Claims 1, 6-9, 21, 26-29, 41, and 46-49 -- Liao alone.

Claims 3, 11, 23, 31, 43, and 51 -- Liao in view of Ko.

Claims 5, 25, and 45 -- Liao in view of Arsenau.

Claims 10, 30, and 50 -- Liao in view of Rosenfled.

Claims 12, 32, and 52 – Liao in view of Ko and Zancho.

Claims 17, 18, 37, and 38 -- Liao in view of Watanabe.

Claims 19 and 39 -- Liao in view of Ko and Watanabe.

Claims 20 and 40 -- Liao in view of Arsenau and Watanabe.

THE ISSUES

Appellants have the burden on appeal to show reversible error by the Examiner in maintaining the rejection. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness." (citation omitted)).

As already noted, the determinative issue regarding the rejection of claims 1, 21, and 41 is whether the scope of the claim term "required bandwidth" reads on Liao.

The principal issue regarding the rejection of claims 17 and 37 is whether Appellants have shown that the Examiner failed to provide a satisfactory rationale for combining the reference teachings.

THE REJECTION OF CLAIMS 1, 21, AND 41
AND THEIR DEPENDENT CLAIMS

Liao discloses a communication unit, such as a cellular phone, that displays the quantity of bandwidth that is currently allocated to the communication unit and may also display one or more additional quantities of bandwidth that are available for allocation to the communication unit. Liao ¶¶ 0010-11.

Liao's Figure 5A is reproduced below.

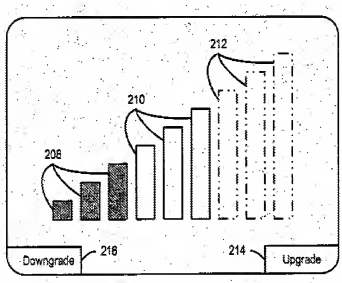

FIG. 5A

Figure 5A is an exemplary screen display that can be provided by Liao's cellular phone. *Id.* at ¶ 0020. In some embodiments, each bar may correspond to a respective channel, in which case the display shown in Figure 5A indicates that three channels 208 are currently allocated to the cellular phone 20, that three additional channels 210 are available for

allocation to the cellular phone 20 but are not currently allocated to the cellular phone 20, and that three further channels 212 are not available for allocation to the cellular phone 20. *Id.* at ¶ 0047. In other embodiments, the bars may map to a set of channels consisting of 9.6, 19.2, 38.4, 76.8, 153.6, 307.2 and 614.4 Kb/s channels. *Id.* at ¶ 0048.

The display of Figure 5A, which can take the form of touch screen, can include "upgrade" and "downgrade" regions 214 and 216 that can be used for requesting or relinquishing quantities of bandwidth. *Id.* at ¶ 0049.

The amount of bandwidth currently in use is determined by an application monitor module 114 (Fig. 3), which interacts with a connection manager module 110 and tracks the bandwidth usage of currently active applications. *Id.* at ¶ 0040. In some embodiments, the application monitor module 114 may operate to identify an application that is most active in bandwidth usage and to cause additional bandwidth requested by the connection manager 110 and obtained via the wireless network bandwidth negotiation protocol module 116 to be allocated to the application identified as the most active. *Id.* In other embodiments, the user can select the application which is to receive the additional bandwidth. *Id.*

We agree with the Examiner's finding that Liao displays a representation of "an available bandwidth of a current communications system" (claim 1) but not with the Examiner's finding that Liao does not display a representation of "a required bandwidth for transmitting and receiving signals on the current communications system" (claim 1). Final

Action 5-6.[4] That finding appears to be based on interpreting "required bandwidth" to refer to requested additional bandwidth to be allocated to the mobile terminal:

> Although Liao teaches the display of available bandwidth (Figures 5A and 5B) and calculating necessary bandwidth used by applications on the mobile device (paragraph 40), Liao does not expressly show displaying the required bandwidth information to a user. However, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to display this information to a user when manually configures the bandwidth allocation.

Answer 29. However, as explained above, it is apparent from Appellants' Specification that the term "required bandwidth" is broad enough to read on the bandwidth that is *currently* in use by the mobile terminal. Furthermore, nothing in the claims requires a narrower meaning. We therefore find that the claimed display of the "required bandwidth" reads on bars 208 in the Figure 5A display (representing the bandwidth currently being used by the cellular phone) and that the claimed display of "available bandwidth" reads on the combination of bars 208 and 210 (representing all of the bandwidth currently available for use by the cellular phone).

Claim 1 additionally requires that the "required bandwidth" be determined "prior to modifying communications therewith." Independent

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[4] Appellants state that "[t]he Office Action admits that Liao does not specifically disclose a display capable of visually representing the required bandwidth for transmitting and receiving signals on a communications system" (Br. 5) without explaining why the Examiner is correct in that
(Continued on next page.)

claims 21 and 41 contain a similar requirement. Despite Appellants' arguments to the contrary, we find that this requirement is satisfied by Liao for the following reasons.

Liao's Figure 4 is reproduced below.

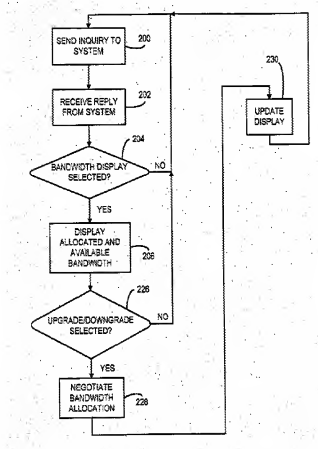

FIG. 4

Figure 4 is a flowchart that depicts a process for informing a user of the cellular phone 20 of additional bandwidth that is or may be available and to allow the user to obtain allocation of the additional bandwidth to the

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regard.

cellular phone 20. *Id.* at ¶ 0043. At step 200, the cellular phone sends an inquiry to the system 100 to determine whether any additional bandwidth is available, after which the cellular phone (step 202) receives a reply identifying any additional available bandwidth. *Id.* at 0044. If it is determined (step 204) that the user has requested a display of bandwidth availability, the phone, e.g., using the Figure 5A display format, displays (step 206) the quantity of bandwidth currently allocated to the cellular phone and any unallocated but available quantities of bandwidth (*id.* at ¶¶ 0044, 0046), which in the manner described above satisfy the requirement for displaying "required bandwidth" and "available bandwidth." Thus, as is necessary to satisfy claims 1, 21, and 41, this display of the "required bandwidth" and "available bandwidth" occurs prior to any modification of the current bandwidth.

If it is next determined (step 226) that the user has selected an upgrade or downgrade of the bandwidth allocated to the cellular phone (e.g., by touching the "upgrade" or "downgrade" region of a touch screen display), the cellular phone (step 228) negotiates a new bandwidth allocation with system 100 in accordance with the input provided by the user. *Id.* at ¶¶ 0051-52.

Appellants, citing Liao's paragraph 0054, which explains that in some embodiments bandwidth may be *automatically* allocated among competing applications in response to a user request for an upgrade, argue that "the Examiner has failed to consider the entirety of the teachings of Liao as they

pertain to the preferred use of the determined bandwidth to automatically allocate bandwidth among competing applications without displaying an indication of the determined bandwidth to a user." Br. 6. This argument is unpersuasive because , as already noted, the Figure 5A display on which the recited displays of "required bandwidth" and "available bandwidth" are being read is generated in step 206 of Figure 4, which occurs prior to entry of a request for an upgrade (step 226), which precedes any bandwidth allocation. Also, as pointed out by the Examiner (Answer 29-30), paragraph 0054 explains that bandwidth allocation may be effected manually *or* automatically.

For the foregoing reasons, the rejection of independent claims 1, 21, and 41 for obviousness over Liao is affirmed, as is the rejection on the same ground of their dependent claims 6-9, 26-29, and 46-49, which are not separately argued. *In re Nielson*, 816 F.2d 1567, 1572 (Fed. Cir. 1987).

Regarding the remaining dependent claims (i.e., claims 3, 5, 10-12, 23, 25, 30-32, 43, 45, and 50-52), which stand rejected for obviousness over Liao in view of one or more of the other references, Appellants simply assert that the alleged deficiencies in Liao addressed above are not cured by those other references. This argument is unconvincing because, as explained above, the alleged deficiencies do not exist. The rejection of these claims is accordingly affirmed.

THE REJECTION OF CLAIMS 17 AND 37
AND THEIR DEPENDENT CLAIMS

As already noted, claims 17 and 37 recite detecting the communication system bandwidth that is available to a first terminal and displaying the result on a second terminal.

The Examiner concedes that "LIAO does not disclose wherein the display is a separate terminal." Final Action 22. For such a teaching, the Examiner relies on Watanabe, which discloses a portable wireless terminal (e.g., telephone) having a display portion that is movable relative to the main terminal body unit so that the user can easily view the display unit and operate an operational section (e.g., keys) during use of the terminal apparatus, such as during calling. Watanabe, col. 1, ll. 9-15; col. 2, ll. 44-57.

Figure 5 of Watanabe is reproduced below.

Fig. 5

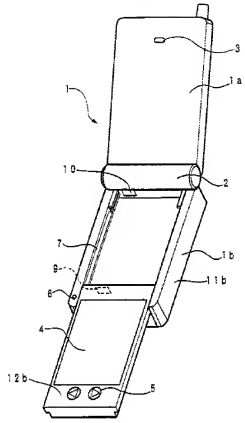

Figure 5 is a perspective view showing a first embodiment of Watanabe's portable wireless information terminal apparatus. *Id.* at col. 4, ll. 42-45. The movable body 12b, which has a display 4 and operational section 5, is slidably engaged with a rail unit 7 of the lower casing main body unit 11b to the extended position depicted in this figure. *Id.* at col. 5, ll. 31-43.

The Examiner characterizes main body unit 11b and movable body 12b (including display 4) as two separate terminals and concluded that

> it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify LIAO to

> include a separate display responsive to a first terminal, as taught by WATANABE, as both systems relate to mobile devices. This is beneficial in that providing a separate display allows viewing of the display while communicating on the mobile device.

Final Action 22. We understand the Examiner's position to be that Liao's portable terminal thus modified will include (1) a main body unit (i.e., first terminal) containing the claimed transmitter, receiver, and controller and (2) a movable body 12b including a display for displaying the available bandwidth.

Appellants make two arguments against this rejection. The first (Br. 8-10) is that Watanabe fails to cure Liao's alleged failure to suggest displaying the "required bandwidth," in support of which argument Appellants repeat their above-discussed misplaced reliance on Liao's automatic bandwidth allocation feature.

The second argument is that the Examiner "is relying upon impermissible hindsight to modify the references and arrive at the presently claimed invention" (Br. 10) because

> [t]he only "objective teaching" alleged by the Examiner to modify Liao to include the slidable display of Watanabe presented in the Office Action is that the proposed combination "would provide a user with a better view of the display during calls." This advantage is only suggestive of the proposed combination of the cited references when viewed in light of the disclosure of the present application.

Id. We do not agree. The Examiner's proposed modification of Liao's portable terminal appears to comport with the principle that "if a technique

has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007)). Furthermore, acceptable rationales for combining reference teachings are not limited to solving the problem the applicant was trying to solve. "[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." *In re ICON Health and Fitness Inc.*, 496 F.3d 1374, 1380 (Fed. Cir. 2007) (quoting *KSR*, 550 U.S. at 420).

The rejection of claims 17 and 37 for obviousness over Liao in view of Watanabe is therefore affirmed, as is the rejection on the same ground of dependent claims 18 and 38, which are not separately argued.

Regarding the rejections of dependent claims 19, 20, 39, and 40, which stand rejected for obviousness over Liao in view of Watanabe and either of Ko and Arsenault, Appellants merely argue that the alleged deficiencies in Liao and Watanabe addressed above are not cured by those references. As already noted, those alleged deficiencies do not exist.

The rejection of claims 19, 20, 39, and 40 is therefore also affirmed.

DECISION

The rejections of claims 1, 3, 5-12, 17-21, 23, 25-32, 37-41, 43, and 45-52 are affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136. *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

KIS

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